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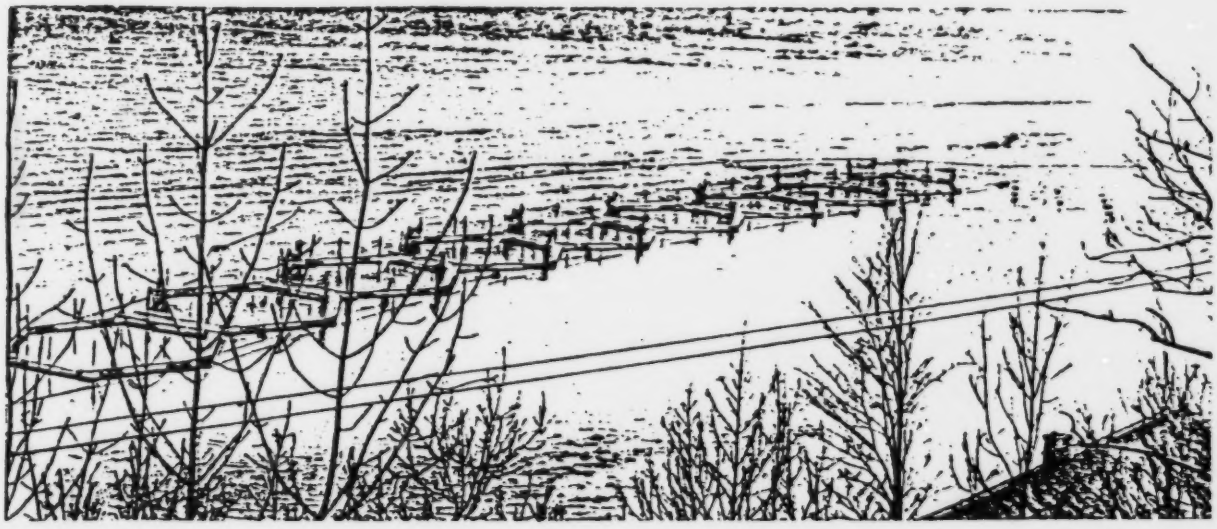
Fiskets Gang

(fisheries news)

First fish farming profitability study:

FISH REARING IS PROFITABLE AND RISKY



A study by the Fisheries Directorate's bureau for studies on operating economy shows that profitability in the fish rearing industry was excellent in 1982. (file photo)

* Profits in the fish breeding industry were high in 1982: 200,000-plus kroner per man-year.
* Profitability varied greatly from facility to facility.
* The highest profits per man-year were enjoyed by rearing facilities with a volume between 5000 m^3 and 15,000 m^3, the lowest were found at the very smallest and very largest rearing facilities (under 3000 m^3 and over 15,000 m^3 total enclosure volume).

* Rearing stations in Sogn og Fjordane and Hordaland had the highest average profits per man-year. Rogaland and Skagerrakkysten had the poorest profits per man-year.

These were the results of a profitability study conducted by the Fisheries Directorate on fish farming in 1982. The study was based on a 1/3 sample of the facilities known to produce hatchery-reared fish in 1982, and included rearing stations of all sizes over 500 m^3. In late February 1983 a reporting form with instructions and a covering letter were sent to the rearing stations in question (120 in all). Reports from 106 stations are included in the survey.

Stocking-fish facilities not included

In the case of combined stocking-fish/food-fish operations, an attempt was made to keep the incomes and expenditures related to the production of stocking fish separate. Erlend Gjøen of the Fisheries Directorate's Bureau for studies on operating economy told Fiskets Gang that production data from stocking-fish facilities would probably be included in later studies. At that time data from hatcheries/facilities devoted purely to stocking fish should perhaps also be included.

For the time being, the study deals with the rearing of food fish.

Gjøen added that newly established stations had not been included in the study because the reporting data from these could result in a distorted image of the industry's general profitability. Only those facilities which had been in operation for some time were included. Gjøen also pointed out that this study was the first of its kind and had been conducted in much the same manner as the Budget Committee's ongoing survey of fishing vessels.

Profitability

"Profitability" in this study of rearing facilities is an expression of how much the individual undertaking actually could pay in labour costs after other fixed and variable operating costs had been covered in a manner which would normally be considered reasonable from the point of view of operating economy. Profitability in this

sense can be simply defined as income minus expenses. Wages are not included as expenses in this equation.

The average profit per man-year for the entire sample of rearing stations was 206,955 kroner in 1982. The Budget Committee has calculated the average profits per man-year of fishing vessels over 13 m l.l. in year-round operation as 97,341 kroner in 1982, the corresponding figure for vessels of 8-13 m l.l. being 52,567 kroner. Even though neither "profit" nor "man-year" are identically defined in the two studies, it is quite clear that profits are much higher in the fish rearing industry than for the fishing fleet.

Variations in profitability

The study reveals large variations in profitability from one rearing facility to another in some cases. A total of 9 of the 106 stations included in the study had negative profits, while another 12 showed a profit per man-year of between 0 and 50,000 kroner. But more than 70% of the rearing stations had profits of over 100,000 kroner per man-year, and nearly half of these had over 200,000 kroner.

Rearing facilities in the size ranges 5000 m^3 - 7000 m^3 and 7000 m^3 - 15,000 m^3 showed a profitability per man-year greater than the average for the country as a whole. Somewhat unexpected was the fact that rearing facilities of 15,000 m^3 and over had the lowest profits per man-year.

There is a large jump in the average number of utilized man-years between the 15,000 m^3-plus group and the 5000-7000 m^3 size group, corresponding to the difference in enclosure volume. However, there is no correspondingly large difference in production between the two groups, since there is a less efficient utilization of the total enclosure volume in the larger group.

The larger stations also have a higher proportion of trout to salmon than the smaller facilities. Stations rearing salmon exclusively were shown to have higher average profits per man-year than those devoted exclusively to trout.

Profitability affected by the type of undertaking

From this study it also appears that the type of company has an effect on profitability. Non-incorporated companies have a higher average profit than corporations. All facilities over 15,000 m^3 are incorporated.

All the above-mentioned factors can have a negative effect on the contribution margin, and explain why the disadvantages and additional costs of the largest facilities seem to outweigh the economies of scale.

The 7,000-15,000 m^3 group has relatively low fixed operating expenses and variable costs in relation to income from production. This is reflected in the higher profitability in much of this group. The rearing stations in this size group have a better utilization of their total capital investment.

Best results found in Sogn og Fjordane and Hordaland

According to the results of the profitability study, rearing facilities in Sogn og Fjordane and in Hordaland are the most successful and have the highest average profit per man-year.

Rogaland and Skagerakkysten have the lowest profitability. Some of the stations in this region have a negative profitability, and the average station size is smaller than in the other regions.

The 3000-5000 m^3 group has a low owner's equity ratio in all the regions, with a consequent high debt ratio. This can be seen in the relatively high interest on debts in relation to income from production. The reason for this may be that stations in this size range have taken out large loans to finance their operations and capital expenditure. In addition, many of the stations in this group have large current liabilities and are struggling with large interest costs.

Table 1. Operating results for rearing stations. National averages.

	Utilized enclosure volume ('000 m^3)	- 3	3 - 5	5 - 7	7 - 15	15 +	all
1.	Sales	547 754	1 154 587	1 852 969	3 464 341	6 289 347	1 871 768
2.	Changes in inventory	103 271	269 761	477 662	693 334	781 912	377 522
3.	TOTAL INCOME FROM PRODUCTION	651 025	1 424 348	2 330 631	4 157 675	7 071 259	2 249 290
4.	Variable costs	344 671	776 634	1 191 192	1 794 949	3 666 233	1 106 750
5.	Fixed operating costs	57 455	133 186	237 482	291 083	991 435	213 461
6.	Interest on debts	30 374	102 925	139 815	139 032	227 156	105 294
7.	Depreciation	25 498	59 080	104 675	220 000	554 000	118 629
8.	Book interest on owner's equity	7 985	15 161	27 650	85 454	175 083	38 444
9.	TOTAL EXPENSES	465 983	1 086 986	1 700 814	2 530 518	5 613 907	1 582 578
10.	TOTAL PROFIT	185 042	337 362	629 817	1 627 157	1 457 352	666 712
11.	Total man-years	1.17	2.10	3.20	5.20	11.20	3.19
12.	Profit per man-year	129 747	177 312	254 578	330 950	129 195	206 955
13.	Owner's equity percent	43.6%	38.1%	46.7%	59.4%	72.9%	47.28%
14.	Overall capital investment	167 962	380 832	484 641	1 653 930	3 460 983	768 059
15.	Capital investment per man-year	125 662	178 135	215 662	311 205	286 879	203 593
16.	Capital investment per kg fish produced	6.98	8.99	10.89	12.38	13.31	9.73
17.	Production per man-year	24 192	25 681	32 130	26 779	20 516	26 448
18.	Production per m^3	11.57	14.44	14.48	15.89	7.69	13.59
19.	Total enclosure volume	1 999	3 550	5 534	8 080	29 309	5 886
20.	Ratio of production to capacity, concession	77.6%	94.7%	109.2%	97.4%	101.3%	94.0%
21.	Ratio of production to capacity, region						
22.	Overall profitability I	18.0%	19.1%	19.4%	27.9%	6.5%	19.8%
23.	Overall profitability II	5.2%	12.8%	16.3%	25.2%	6.5%	13.5%
24.	Liquidity ratio	1.07	0.52	0.49	0.86	2.10	0.81
25.	Interest contribution rate I	6.56	5.06	9.11	11.98	7.09	7.68
26.	Interest contribution rate II	1.81	3.78	8.36	11.27	7.09	5.78
27.	Contribution margin	309 930	651 255	1 139 438	2 362 726	3 405 026	1 144 524
28.	Contribution rate	30.2	44.8	45.4	54.5	48.2	43.17
29.	Number of stations in sample	27	31	20	20	6	104
30.	Total number of stations	155	95	73	51	8	382

Table 2. Operating results for rearing stations, by region. All stations. Average per station.

	Finnmark, Troms and Nordland	Nord- and Sør-Trøndelag, Møre and Romsdal	Sogn og Fjordane, Hordaland	Rogaland, Skagerrakkysten
Profit per man-year	210 801	174 957	238 749	171 671
Utilized enclosure volume	4 118	7 111	6 914	3 520
Number of stations in sample	20	34	33	17
Total number of stations	86	142	109	45

The 500-3000 m^3 group in the northernmost regions showed higher profitability than the same size group in the other regions. The reason for this was that this group had a greater overall enclosure volume and greater production per cubic metre, resulting in a higher income from production and a high contribution margin.

In addition, the stations in this group were newer on average, and maintenance costs were lower. Fixed operating costs were therefore lower, but depreciation higher.

The 3000-5000 m^3 group in all regions had relatively poor profitability in relation to income from production. This was because of the high interest on debts and high variable costs. The latter were probably a result of greater average wastage among this group in relation to the smaller groups.

New study

Erlend Gjøen has informed us that a new study for 1983 is under way. The Fisheries Directorate has already sent out questionnaires to the same number of rearing stations as were included in the initial survey. Gjøen points out that an attempt will be made to improve on the first study--with regard to the depreciation factor, for example.

The Directorate's Bureau for studies on operating economy, which is carrying out these studies of rearing station profitability, is seeking to improve its knowledge of the industry, e.g. as regards fishpen types and their service life, with a view also to obtaining more accurate depreciation figures, according to Gjøen.

Useful results

The managing director of the Fish Farmers' Marketing Co-operative, Odd Steinsbø, stated in a commentary to Fiskets Gang that the differences in profitability from station to station were greater than anticipated. Steinsbø went on to stress the interest and usefulness of this study for the fish rearing industry. He believes that the large differences in profitability reflect a relatively high risk factor in the industry. This is borne out by the fact that no less than 9 of the 106 stations in the study had a negative profitability figure.

Although the study has little direct bearing on sales as such, said Steinsbø, the results nevertheless have something to say as to what form of operation is the most profitable in the fish rearing industry. As regards the manner in which the profitability study was actually carried out, on the other hand, Steinsbø felt that it was perhaps too comprehensive and complex. He thinks that fish farmers tend to "get their backs up" when they receive reporting forms of the type used in this survey. In Steinsbø's view it would have been better to have the fish breeders provide fewer and simpler responses than was the case in this study.

- Øystein Økland

Definitions:

Overall profitability I

Expresses the return on total capital investment in an undertaking.

Definition:

$$\frac{\text{Earnings before extraordinary items + financing costs} \times 100\%}{\text{Total capital investment}}$$

Extraordinary items: Income and expenses not directly related to production at food-fish facilities.

Overall profitability II

Same as overall profitability I, but incorporates an estimated cost figure for the input by the owner and his family in the absence of any loans.

Liquidity ratio

Gives a figure for the facility's current assets in relation to its current liabilities.

Definition:

$$\frac{\text{Cash + securities + receivables}}{\text{Current liabilities}}$$

Interest contribution rate I

Expresses the number of times earnings cover interest charges.

Definition:

$$\frac{\text{Interest expense + earnings before extraordinary items} \times 100\%}{\text{Interest expense}}$$

Interest contribution rate II

Same as interest contribution rate I, but incorporates an estimated cost figure for loan-free input by the owner and his family.